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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/471,806	12/23/1999	MARTA M RAMBAUD		7978

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FARKAS & MANELLI PLLC
2000 M STREET N W 7TH FLOOR
WASHINGTON, DC 200363307

EXAMINER

BAYARD, EMMANUEL

ART UNIT	PAPER NUMBER
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2631

DATE MAILED: 11/06/2003

9

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/471,806

Applicant(s)

RAMBAUD ET AL.

Examiner

Emmanuel Bayard

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 August 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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DETAILED ACTION

1. This is in response to amendment filed on 8/22/03 in which claims 1-30 are pending. The applicant's amendments have been fully considered but they are moot based on the new ground of rejection.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 3-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Del signore et al U.S. patent No 5,157,395.

As per claim 1, Del Signore et al discloses a digital adaptive equalizer for a data path communication comprising: a first programmable filter capable (see figs. 1, 2 element 14 and col.3, lines 55-67) of being programmed to implement any of a plurality of transfer functions (see fig.2 elements 18a-18d and col.4, lines 31-50) ; a switch is considered as the claimed filter selector (see fig.2 element 19 and col.4, lines 32-50) to select any one of said plurality of transfer functions to select any one of said plurality of transfer functions; a second digital filter (see abstract fig.2 element 16 and col.2, lines 3-15 and col.3, line 57 and col.5, lines 60-61) for receiving an output from said first programmable filter.

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As per claim 3, the equalizer of Del Signore does includes a finite impulse response (see fig.2 and col.3, line 5).

As per claims 4 and 5, the equalizer of Del Signore does include second digital filter adapts a transfer function to best fit an input data (see fig.2 element 16 and col.3, lines 63-65).

As per claims 11-13, Del Signore does includes selection of plurality of any one of at least four sets of coefficients available to said first (see fig.2 element 19 and col.4, lines 34-40)

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Del Signore et al U.S. Patent No 5,157,395 in view of Mathe U.S. Patent No 6,389,069 B1.

As per claim 2, Del Signore discloses all the features of the claimed invention except for infinite impulse response.

Mathe does includes an infinite impulse response (see col.5, line 22).

It would have been obvious to one of ordinary skill in the art to implement the IIR of Mathe into Del Signore as to remove any bias in the output signal and adjust the gain of the output signal.

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Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 6-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Del Signore et al U.S. Patent No 5,157,395 in view Boyd et al U.S. Patent No 6,438,162 B1.

As per claim 6, Del Signore discloses all the features of the claimed invention except a T1 communication path and an E1 communication path.

Boyd et al teaches a digital filter having a T1 communication path and an E1 communication path (see abstract and col.2, line 35).

It would have been obvious to one of ordinary skill in the art to implement the a T1 communication path and an E1 communication path of Boyd into Del Signore so minimal configuration by the user could be implemented while using high speed applications.

As per claims 7-8, the equalizer of Boyd does include twisted pair or coaxial cable (see fig.1 element 1 and col.3, lines 21, 51,). Furthermore implementing such cable into Del Signore would have been obvious to one skilled in the art as to provide output signal which ideally has a waveform identical to that originally transmitted.

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As per claim 9, the communication path of Del Signore would include a wireless medium so that any digital coded signal could be accurately equalized over free space.

As per claim 10, Del Signore teaches an analog to digital converter (see abstract).

Furthermore implementing such digital converter to received T1/E1 signal would have been obvious to one skilled in the art so that digital filter could accurately remove noise or interference in the incoming digital signal.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 14-17, 20-25 and 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over DeJaco et al U.S. Patent No 5,915,235 in view of Simmons et al U.S. Patent No 6,195,414

B1.

As per claims 14 and 24, DeJaco et al disclose a method of digitally equalizing a received data signal comprising: firstly filtering said received data signal using a first digital filter (see fig.4 element 20 and col.3, lines 53-55); an equalizer (see fig.4 and col.2, lines 17-20 and col.3, lines 42-45) is functionally equivalent to the claimed (adaptively adjusting) an output of said first digital

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filter to accurately match an inverse response (col.5, lines 5-10) of a transmission channel used to transmit said received data signal.

However DeJaco et al does not teach filtering said received **T1/E1**.

Simmons teaches said received **T1/E1** (see fig.3 element 340 and col.5, line 53 and col.6, line 46)).

It would have been obvious to implement the teaching of Simmons into DeJaco as to pass digital bit stream through digital interface which suitably interfaces to a particular source of the bit stream.

As per claim 15, the system of DeJaco would include detecting a periodic pattern of said received **T1/E1** as to accurately provide gain correction to the digital equalization circuit..

As per claim 16, the system of DeJaco would include freezing said adaptive adjustment to accurately provide gain correction to the digital equalization circuit.

As per claims 17 and 25, the system DeJaco would include an IIR as to provide the variable gain control to adjust the energy of the subbands of the input signal..

As per claims 20, 21 and 27, the system of DeJaco includes a second filter (see fig.4, element 22).

As per claim 22, the system of DeJaco inherently includes adaptively adjusting coefficients for said finite impulse response to accurately provide gain correction to the digital equalization circuit..

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As per claim 23, the system of DeJaco would include a least mean square algorithm as to provide the best mean square fit to a compensated frequency response which is flat .

As per claims 28 and 29 the system of DeJaco would include a FIR as to provide the variable gain control to match the inverse response of the input signal.

As per claim 30, the system of DeJaco would include a least mean square algorithm to provide the best mean square fit to a compensated frequency response which is flat .

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 18-19 and 26 are rejected under 35 U.S.C. 103(a) being unpatentable over DeJaco et al U.S. Patent No 5,915,235 in view Simmons et al U.S. Patent No 6,195,414 B1 and further in view Del Signore et al U.S. Patent No 5,157,395

As per claims 18 and 26, DeJaco and Simmons in combination disclose all the features of the claimed invention except selects and implements one of a plurality of transfer function coefficient available for said digital filter.

a switch is considered as the claimed (selects and implements) (see fig.2 element 19 and col.4, lines 32-50) one of a plurality of transfer function coefficient available for said digital filter.

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It would have been obvious to one of ordinary skill in the art to implement the teaching of Del Signore into DeJaco and Simmons as to select from the main filter characteristics the filter characteristic which provides the best mean square fit to a compensated frequency response.

As per claim 19, it would have obvious to one skill in the art to implement the step of setting an initial value to said plurality of transfer function into DeJaco and Simmons as to enhance the system capability to accurately compensate the digitalized signal in the equalizer.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ohki et al U.S. Patent No 5,689,572 teaches a method of actively controlling noise.

Suzuki U.S. Patent No 4,517,596 teaches a system comprising a preliminary processing device.

Ferrer et al U.S. Patent No 6,115,589 teaches a speech operated noise attenuation.

Dix et al U.S. Patent No 5,557,560 teaches an apparatus and method for pulse compression..

Lu U.S. Patent No 6,275,836 B1 teaches an interpolation filter.

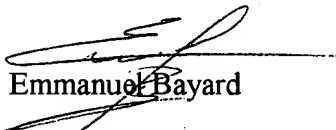
McNeely (*) U.S. patent No 6,310,566 B1 teaches a digital sample rate conversion.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emmanuel Bayard whose telephone number is (703) 308-9573. The examiner can normally be reached on Monday-Thursday from 8:00 AM - 5:30 PM. The examiner can also be reached on alternate Fridays.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad H. Ghayour , can be reached on (703) 306-3034. The fax phone number for this Group is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3800.


Emmanuel Bayard
Primary Examiner

October 31, 2003